

**REMARKS**

Claims 16-30 were previously pending. By virtue of this amendment, claims 16, 18, and 29 have been amended, claim 30 has been canceled, and new claims 31-38 have been added. Accordingly, claims 16-29 and 31-38 are currently under consideration.

Claim 16 has been amended to claim: A carrier and drive arrangement for use in a solar energy reflector system and which comprises: a) a carrier structure having i) a reflector element, ii) a platform for supporting the reflector element, iii) a frame portion that includes hoop-like end members between which the platform extends, wherein the frame portion comprises a space frame, and wherein each of the hoop-like end members has a channel-section circumferential portion, and iv) support members which support the frame portion by way of the end members and which accommodate turning of the carrier structure about an axis of rotation that is substantially coincident with a longitudinal axis of the reflector element when supported by the platform, wherein the support members comprise spaced-apart supporting rollers which track within the circumferential portion of associated ones of the end members; and b) a drive system incorporating an electric motor for imparting turning drive to the carrier structure. Claim 18 has been amended to change dependency, claim 29 has been amended in view of the amendments to claim 16 and also to provide more appropriate antecedent basis, and claim 30 has been canceled as redundant in view of the amendments to claim 16.

Support for the amendments and new claims may be found throughout the specification and claims as originally filed, for example, *inter alia*, for claim 16 (original claims 29 and 30, page 5 line 35 – page 6 line 5), claims 31 and 32 (p. 5 lines 23-29), claims 33 and 34 (page 5 line 35 – page 6 line 5), claim 35 (page 6 lines 17-20), claim 36 (page 3 lines 19-22 and Figure 1), and claims 37 and 38 (page 7 lines 14-19). No new matter is believed to be added.

With respect to all amendments and canceled claims, Applicant has not dedicated or abandoned any unclaimed subject matter and, moreover, have not acquiesced to any rejections and/or objections made by the Office. Applicant expressly reserves the right to pursue prosecution

of any presently excluded claim embodiments in future continuations, continuation-in-part, and/or divisional applications.

Applicant thanks the Examiner for avoiding overburdening the Applicant with redundant rejections.

### **Double Patenting**

Claims 16-30 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being allegedly unpatentable over claims 18-33 of co-pending U.S. Appl. No. 10/563,171.

Applicant notes the provisional nature of the rejection, and respectfully requests deferral of this rejection until a Notice of Allowance is received in co-pending U.S. Appl. No. 10/563,171, and assessment of the applicability of the rejection at that time.

### **Rejection Under 35 USC § 102**

Claims 16, 19-23, and 25 are rejected under 35 USC § 102(b) as allegedly anticipated by Sick (4,820,033). Applicant respectfully traverses the rejection.

Sick relates to a solar mirror apparatus having an elongate support frame on which resiliently flexible sheet metal mirrors are secured in a parabolically curved arrangement, with an elongate solar radiation receiver being mounted at the focal line of the sheet metal mirrors. Sick does not teach or suggest a carrier structure comprising a space frame, as claimed in amended claim 16. A space frame structure advantageously provides the carrier structure with a high degree of torsional strength and stiffness for comparatively less material and wind resistance. Solar energy reflector systems, to be efficient, require the ability to accurately angle the reflector element relative to a receiver element, particularly when the receiver element is remote from the reflector element. Small changes in the position and angle of the carrier structure, or deformation e.g. due to wind gusts, may result in relatively large changes in reflection angle from the reflector element, greatly

reducing the efficiency of the solar energy reflector system. Further, the high torsional strength and stiffness of the carrier structure of the instant invention results in a carrier structure that is easier to drive. Sick also does not teach or suggest hoop-like end members having a channel-section circumferential portion in combination with support members comprising spaced-apart supporting rollers which track within the circumferential portion of associated ones of the end members, nor does Sick teach or suggest these elements in combination with a space frame.

Claims 19-23 and 25 depend from claim 16 and therefore also are not anticipated by Sick. Further, Sick does not teach a carrier structure wherein the platform comprises a panel-like platform which is formed with stiffening elements in the form of corrugations, as claimed in claims 19 and 21, nor does Sick teach a carrier structure wherein the platform comprises a panel-like platform which is formed with stiffening elements in the form of flutes, as claimed in claims 20 and 22.

Accordingly, Applicant respectfully requests withdrawal of the rejection under 35 USC § 102(b).

### **Rejections Under 35 USC § 103**

A. Claims 17 and 18 are rejected under 35 USC § 103(a) as allegedly unpatentable over Sick (4,820,033) in view of Butler (4,559,926). Applicant respectfully traverses the rejection.

Alone or in combination, Sick and Butler do not teach or suggest the claimed invention. As discussed above, Sick does not teach or suggest all elements of claim 16. Butler does not remedy the deficiencies of Sick. Butler relates to a parabolic-trough solar collector system, with each collector driven to track the sun using a ring driven in centerless fashion. Butler does not teach or suggest a space frame, nor does Butler teach or suggest the combination of: hoop-like end members having a channel-section circumferential portion in combination with support members comprising spaced-apart supporting rollers which track within the circumferential portion of associated ones of the end members, nor does Butler teach or suggest these elements in combination with a space

frame. Claims 17 and 18 are dependent from claim 16, and thus are not unpatentable in view of Sick and Butler, alone or in combination.

Further, neither Sick nor Butler teach or suggest a unidirectional drive, as claimed in claim 17.

**B.** Claims 24 and 26-28 are rejected under 35 USC § 103(a) as allegedly unpatentable over Sick (4,820,033). Applicant respectfully traverses the rejection.

As discussed above, Sick does not teach or suggest all elements of claim 16. Claims 24, and 26-28 depend from claim 16, and thus are not unpatentable over Sick.

Further, Sick is directed to a parabolic trough solar collector system, wherein the receiver element is part of the carrier structure comprising the reflector element. In contrast, the invention as claimed in claim 24 is directed to a carrier structure for use in a linear Fresnel solar reflector system, in which the receiver element is remote from the carrier structure comprising the reflector element. It would not be obvious to one of ordinary skill in the art to combine a platform for supporting a reflector element having a radius of curvature within the range of 20 to 50 metres with features of the systems of Sick, since a reflector element having a radius of curvature within the range of 20 to 50 metres would not focus on the receiver element in a parabolic trough solar collector system.

**C.** Claims 29 and 30 are rejected under 35 USC § 103(a) as allegedly unpatentable over Sick (4,820,033) in view of Funger (6,543,441). Applicant respectfully traverses the rejection.

As an initial matter, claim 30 has been canceled without prejudice. However, Applicant provides the follow arguments, since the limitations of canceled claim 30 have been incorporated into independent claim 16.

Alone or in combination, Sick and Funger do not teach or suggest the claimed invention. As discussed above, Sick does not teach or suggest all elements of claim 16. Funger does not

remedy the deficiencies of Sick. Funger relates to an apparatus for utilizing solar energy. Funger does not teach or suggest a space frame, nor does Funger teach or suggest the combination of: hoop-like end members having a channel-section circumferential portion in combination with support members comprising spaced-apart supporting rollers which track within the circumferential portion of associated ones of the end members and in combination with a space frame. Claim 29 depends from claim 16, and thus is not unpatentable in view of Sick and Funger, alone or in combination.

Further, as the Examiner has noted, Sick does not recite the claimed channel/roller arrangement. The claimed combination of hoop-like end members having a channel-section circumferential portion and support members comprising spaced-apart supporting rollers which track within the circumferential portion of associated ones of the end members advantageously constrain the hoop-like end members in a longitudinal direction. However, Sick has already solved the problem of constraining the circular ring in an axial direction, utilizing a different structure (see col. 3 lines 58-69). Sick teaches that objects of the invention include low weight and low complexity of the solar mirror arrangement (see col. 1 lines 18-25). One of ordinary skill in the art would not look to combine elements from the heavy and complex structure of Funger (see e.g. col. 4 lines 24-31, col. 7 lines 34-35) with the lightweight structure of Sick to address a problem that Sick has already solved.

Accordingly, Applicant respectfully requests withdrawal of the rejections under 35 USC § 103(a).

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejections of the claims and to pass this application to issue. If it is determined that a telephone conference would expedite the prosecution of this application, the Examiner is invited to telephone the undersigned at the number given below.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Garth Janke', written in a cursive style.

Garth Janke

Reg. No. 40,662

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